

**ABSTRACT****Fabrication of a FeRAM Capacitor Using a Noble Metal Hardmask**

5           A ferroelectric capacitor is fabricated using a noble metal hardmask. A  
hardmask is deposited on a top electrode of a capacitor stack comprising a  
ferroelectric layer sandwiched between the top electrode and a bottom  
electrode. The top electrode is patterned according to the pattern of the  
hardmask by etching at a first temperature. The top electrode serves as the  
10 noble metal hardmask and the ferroelectric layer is patterned according to the  
pattern of the top electrode at a second temperature lower than the first  
temperature, resulting in the top electrode having sidewalls beveled relative to a  
top surface of the top electrode etching. The bottom electrode is etched at a  
third temperature to form the capacitor.

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Fig. 6